DEC 9 - 2003

(4)

No. 03-433

IN THE

Supreme Court of the United States

October Term, 2003

ALCAN ALUMINUM CORPORATION

Petitioner,

v.

UNITED STATES OF AMERICA
AND THE STATE OF NEW YORK

Respondents.

ON PETITION FOR WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS
FOR THE SECOND CIRCUIT

BRIEF *AMICUS CURIAE* OF ATLANTIC LEGAL FOUNDATION IN SUPPORT OF PETITIONER

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INTEREST OF *AMICUS*

Atlantic Legal Foundation ("ALF") is a non-profit public interest law firm. One of its mandates is to ensure that sound science is used in the adjudicatory process. In pursuing that mandate, the Foundation has filed numerous *amicus* briefs, often on behalf of prominent scientists and scholars in important cases implicating scientific issues. It has submitted briefs in numerous federal and state courts, and its briefs have been cited with approval by, among others, the majority opinions in *Daubert v. Merrell Dow Pharamaceuticals* and *Kumho Tire Co. v. Carmichael.*[1,2,3]

The Foundation has a strong interest in this case because the trial court and Court of Appeals for the Second Circuit failed to apply sound scientific principles. ALF supports the petition for a writ of *certiorari* because of its belief that federal courts' should use sound scientific principles in all cases involving scientific evidence. We believe that the lower courts' decisions in this case are inimical to the application of sound scientific principles to the regulatory process, to the environmental enforcement process, and to the adjudicatory process.

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[1] Counsel for the parties have consented to the filing of *amicus* briefs by letters filed with the Clerk of the Court.

[2] Pursuant to Supreme Court Rule 37.6, *amici curiae* state that this brief was not prepared, written, funded or produced by any person or entity other than *amicus curiae* or its counsel.

[3] Atlantic Legal Foundation is affiliated with Atlantic States Legal Foundation, which is also filing an *amicus* brief in support of Petitioner.

PRELIMINARY STATEMENT AND STATEMENT OF THE CASE

ALF believes it is important for this Court to grant *certiorari* to provide guidance to the lower courts on applying scientific principles in cases tried to the bench. The Court has addressed the admissibility of scientific and other expert opinions in jury trials in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), *General Elec. Co. v. Joiner*, 522 U.S. 136 (1997) and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999). Those cases involved the trial court's "gatekeeper" responsibilities to ensure that only relevant and reliable scientific or other expert testimony reach a lay jury.

However, we submit, even in a bench trial, where the "gatekeeper" role is at least attenuated, courts must ensure that their decisions are based on sound scientific evidence. The integrity of adjudicatory process is impaired if courts ignore properly derived test results and conclusion drawn from them without sound reasons. This case provides the Court with the opportunity to provide guidance on the use of scientific hypotheses or models, laboratory tests or other methods used to test those hypotheses, and scientific opinions in cases that involve the presence of chemical substances and their effects on health or the environment.

This case involves the liability of Petitioner Alcan Aluminum Corporation ("Alcan") under the Comprehensive Environmental Response, Compensation, and Liability Act

(CERCLA), 42 U.S.C. §§ 9601-9675. During the 1970s, Alcan sent waste emulsion to sites operated by Pollution Abatement Services (PAS) and by Fulton Terminals, Inc. in New York State *See* Pet. App. 34a.[4] The United States and the State of New York (collectively "the government") brought this CERCLA action against Alcan seeking response costs incurred in remedying environmental contamination at the two hazardous waste sites. On January 15, 1991 the district court granted summary judgment in favor of the government against Alcan, finding Alcan jointly and severally liable for certain response costs under Section 107 CERCLA, 42 U.S.C. § 9607 (as amended). *See United States v. Alcan Aluminum Corp.*, 755 F. Supp. 531 (N.D.N.Y. 1991).

In 1993, the Second Circuit affirmed the district court on liability issues, but remanded on the issue of damages. In so doing, the Second Circuit, as it later explained, created a "special exception" to "excuse a responsible party from all CERCLA liability only in instances where (1) a party contributed hazardous substances to a site in quantities that did not exceed background levels and (2) the hazardous substances were incapable of concentrating." *United States v. Alcan Aluminum Company*, 315 F.3d 179, 186 (2d Cir. 2003) (citing *United States v. Alcan Aluminum Corp.*, 990 F.2d 711, 722 (2d Cir. 1993)). The Second Circuit placed the burden of proof on the party seeking to qualify for the special exception — in this case, Alcan. *See United States*

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[4] The background and procedural history of this case is canvassed in the Second Circuit's opinion in *United States v. Alcan Aluminum Corp.*, 990 F.2d 711 (2d Cir. 1993) and various unpublished opinions in this case.

v. Alcan Aluminum Company, 315 F.3d 179, 185 (citing *United States v. Alcan Aluminum Company*, 990 F.2d at 722).

The Second Circuit stated that the avoidance of all liability is a "special exception" available only if "the company could prove that its pollutants did not contribute more than background contamination and also cannot concentrate." *Id.* at Pet. App. 8a (emphasis supplied, citations omitted). If Alcan did not qualify for the special exception, it could still limit its liability by presenting "evidence relevant to establishing divisibility of harm" and would thus be liable for an apportioned share of outstanding remediation costs. *Id.*

At the bench trial in the district court, Alcan showed, based on scientific testing and expert testimony, that the only CERCLA "hazardous substances" (cadmium, chromium, copper, lead and zinc compounds) in the emulsion were below background levels. A-224, 342, 346-349, 1188. Alcan also demonstrated that the emulsion disposed of at PAS and Fulton did not contain nickel, PCBs or VOCs. *See* 97 F. Supp.2d at 267. Alcan's proof consisted of scientific testing, most of which was conducted by the government[5], and of testing performed at other Superfund sites where the emulsion was disposed of. A-330-341, 377-378.

The government abandoned its arguments concerning the below background metals that they initially alleged gave rise to liability, and instead attempted to show that there were other

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[5] Alcan's test results, which the Court rejected, were consistent with those of the government.

hazardous substances in the emulsion such as nickel, PCBs and VOCs. The government relied on testimony of their experts to support their position.

The district court gave two reasons why Alcan could not escape all liability. First, it found Alcan's waste emulsion contained polychlorinated biphenyls (PCBs). The government argued, and the trial court found, that because there are no naturally occurring background levels of PCBs, the special exception was not available to Alcan. *See United States v. Alcan Aluminum Corp.*, 97 F. Supp. 2d 248, 268-69 (N.D.N.Y. 2000)[6] Second, the trial court found that Alcan did not meet its burden of showing that metals in its emulsion could not concentrate. The court predicated this decision in part on a finding that Alcan's emulsion contained nickel, which was detected at above background levels at the PAS and Fulton sites. *See id.*

The Second Circuit held, without explanation, that the record contained "ample evidence" to support the district court's finding that Alcan's waste emulsion contained nickel and PCBs. Pet. App. 10a. The Second Circuit then stated the special

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[6] However, EPA itself has issued a policy guidance document on the use of background concentration during the CERCLA remedial investigation process in which background concentrations for CERCLA purposes of man-made ("anthropogenic") substances are set, not at zero as the government contended in the trial and appellate courts, but at the level representing a substance's concentration in the environment as a result of activities not specifically related to the CERLCA release in question. U.S. EPA, Office of Solid Waste and Emergency Response, Office of Emergency and Remedial Response, "Role of Background in the CERCLA Cleanup Program," OSWER 9285.6-07P (April 26, 2002) at 3, 5, 7.

exception was not available to Alcan because of the presence of PCBs in Alcan's emulsion. *See id.* The Second Circuit did not reach the issue of whether its nickel ruling would provide an independent ground for making the special exception unavailable[7].

The Second Circuit's decision does not cite or specifically describe the evidence it relied on for its ruling on the presence of nickel and PCBs. In finding the presence of PCBs in the emulsion, the trial court disregarded test data scientific and scientific models of the behavior of PCBs in Alcan's emulsion at the two sites provided by the trial court's own expert. To find nickel in the emulsion, the trial court accepted a hypothesis by two experts about the presence of nickel in Alcan's emulsion; but that was "falsified" by numerous laboratory test results, including results of tests performed by the U.S. Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (DEC) showing that nickel was not detected in the emulsion.

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[7] The Second Circuit affirmed the district court solely on the basis of the district court's erroneous understanding that Alcan's emulsion contained above background PCBs.

> The finding that Alcan's waste emulsion contained PCBs is particularly significant because — as the district court properly ruled — it disqualifies Alcan from escaping all CERCLA liability. . . . Because Alcan's emulsion was contaminated with PCBs, which are man-made substances without natural background levels, Alcan cannot escape liability under the special exception this court articulated.

315 F.3d 179 at 186 (internal citation omitted).

The trial court had no basis for ignoring the test results. To support its findings and conclusions, the district court arbitrarily rejected the government's own analytical testing data which showed that the emulsion contained neither nickel nor PCBs. In so doing, the district court relied on expert testimony that did not meet the requirements of *Daubert v. Merrell Dow Pharmaceuticals, Inc.* 509 U.S. 579 (1993) or Fed. R. Evid. 702, and that was recognized as "highly speculative" by the court's own expert.

Where reliable test data prove a scientific hypothesis to be wrong, the hypothesis should not be relied upon as the basis for imposing liability. The trial court, and the Second Circuit, should have rejected the hypothesis, not the data.

ARGUMENT

THE SECOND CIRCUIT ERRED IN CONCLUDING THAT CERCLA LIABILITY ATTACHES WHILE IGNORING TEST DATA THAT WAS CENTRAL TO THE ISSUE OF THE PRESENCE OF HAZARDOUS SUBSTANCES

A. The Lower Courts' Findings Were Based on Expert Opinion Testimony That Did Not Meet The *Daubert* Standard for Reliability or the Requirements of Fed. R. Evid. 702

Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993)[8], *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999)[9] and Fed. R. Evid. 702[10] require that to be admissible expert

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[8] In *Daubert*, the Court held that "... the requirement that an expert's testimony pertain to 'scientific knowledge' establishes a standard of evidentiary reliability." 509 U.S. at 590, and that "...our reference here is to evidentiary reliability–that is, trustworthiness....In a case involving scientific evidence, evidentiary reliability will be based upon scientific validity." *Id.* at 590, n.9.

[9] In *Kumho*, 526 U.S. at 149, the Court held that "...where [expert] testimony's factual basis, data, principles, methods, or their application are called sufficiently into question...the trial judge must determine whether the testimony has 'a reliable basis in the knowledge and experience of [the relevant] discipline,' citing *Daubert*, 509 U. S., at 592.

[10] Fed.R.Evid. 702 (1) requires hat the expert's "testimony [be]

(continued...)

testimony must be reliable. A fundamental measure of reliability is whether the expert's hypothesis has been tested or can be tested. *See* C. Hempel, PHILOSOPHY OF NATURAL SCIENCE 49 (1966) ("[T]he statements constituting a scientific explanation must be capable of empirical test"); K. Popper, CONJECTURES AND REFUTATIONS: THE GROWTH OF SCIENTIFIC KNOWLEDGE 37 (5th ed. 1989) ("[T]he criterion of the scientific status of a theory is its falsifiability, or refutability, or testability"), cited in *Daubert*, 509 U.S. at 593; *Kumho*, 526 U.S. at 145.

Although *Daubert* and its progeny have focused on the potential influence of unreliable testimony on a jury, nothing in the federal rules suggests that patently unreliable testimony that would be inadmissible in a jury trial can be admitted, used and relied upon in a bench trial.

A fundamental issue before the district court was whether Alcan's emulsion contained nickel or PCBs. The government relied upon expert testimony to support these contentions. The expert testimony offered by the government, and accepted by the district court, was unreliable because it was contradicted or unsupported by empirical data. This Court noted in *General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997), in the appropriate case, a trial court can "conclude that there is simply too great an analytical gap between the data and the opinion offered." Where, as here, the data and the expert opinion proffered by the same side are in-

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[10](...continued)
based upon sufficient facts or data; Fed.R.Evid. 702 (3) requires that the witness apply "the principles and methods reliably to the facts of the case."

consistent, the district court should not have credited the expert opinion offered by that side.

Chemical analyses of the emulsion discharges at the two sites at issue and at other sites were conducted to determine whether requisite amounts of nickel or PCBs could be detected. The tests failed to show the presence of nickel. Numerous tests conducted both by the government and Alcan consistently found neither nickel nor more than minute quantities of PCBs to be in the emulsion. Appendix in the Court of Appeals (hereafter "A-") 1055, 1467-68 (nickel), 1143-48 (PCBs). Rather than rely on this objective evidence, the district court attempted to discredit, explain away or ignore all of the scientific test data offered by the government, and instead to rely on the untested hypothesis of the governments' expert, rather than on the test data. In doing so, the district court ignored a cardinal principle of scientific inquiry and reasoning.

At the PAS site Alcan's waste emulsion, together with wastes from many other contributors, was deposited in a "lagoon," which was stratified into three layers: an oily top layer, an aqueous middle layer, and a lower sludge layer. *See* Pet. App. 29a. The district court found that Alcan's emulsion initially occupied the middle aqueous layer and eventually broke down so some of the waste likely would have ended up in the top layer. *See* Pet. App. 43a.

The court-appointed expert provided a hypothesis for how PCBs in Alcan's emulsion would behave in the lagoon: PCBs from Alcan's emulsion would largely associate with the top oily layer

and the bottom sludge layer. *See* A-1070, 1077. The governments' tests found PCBs only in the top oily layer, but not in the bottom layer. *See* Pet. App. 43a. This data either directly contradicted the hypothesis proffered by the court's expert, or, if interpreted consistent with that hypothesis, indicated that PCBs had not been present in Alcan's emulsion.

The court-appointed expert's hypothesis described how PCBs in Alcan's emulsion would have behaved if the emulsion had contained PCBs. *See* A-1070, 1077; Pet. App. 22a n.3. Because no PCBs were found in the emulsion or at locations where the emulsion had been discharged, the only conclusion consistent with these tests and the expert's hypothesis is that Alcan's emulsion did not contain PCBs. This conclusion should have been dispositive. The Second Circuit apparently relied instead on indirect, circumstantial evidence that was not supported by the test results at the sites.

The Second Circuit did not elaborate on its finding that the emulsion contained PCBs, but the trial court provided the reasons for its finding. The court-appointed expert's model was about PCB behavior *in the emulsion* in the lagoon, but the district court apparently believed, incorrectly, that the model was about PCB behavior *anywhere* in the lagoon. Because PCBs were present only in the top layer, the district court believed that the expert's opinion that PCBs would also concentrate in the bottom layer must be wrong, because no PCBs were found in the bottom layer. *See* Decision and Order, August 8, 2000, denying Alcan's motion for reconsideration, A-196-197 n. 9 & 10. However, the court-appointed expert was not asked to address how PCBs in the top

oily layer would behave, *see* A-1070, 1077, so the district court judge incorrectly discarded the model and its own expert's conclusion that PCBs were not present in Alcan's emulsion. The court-appointed expert's model was thus consistent with the data, and there was no fact-based reason for disregarding it, even though it would lead to a conclusion contrary to the one the trial court wanted to reach.

The district court also stated that variability in the lagoon's layers cast doubt on the conclusiveness of the PCB testing. *See* Pet. App. 43a-44a. However, there is no evidence that PCBs would have accumulated as discrete deposits that probably would be missed by sampling. In light of the sludge test results at both the PAS and Fulton sites, the trial court should not have concluded its own expert's model was wrong.

Without any data to support a finding of the presence of PCBs in the emulsion, the district court relied on the hypothesis of the government's expert, Mr. James Connolly, the premise for which the district court's own expert, Professor Driscoll, deemed "highly speculative."A-1070 and A-1076-1079. Mr. Connolly stated that the contamination of the hot mill with PCBs discovered in the mid-1980s could not have been caused by a single event in 1983 because he believed that the extent of concentration of the PCBs in the concrete floor of the hot mill would have required a long period of time to displace the oil in the concrete. A-734, A-738-742.

Mr. Connolly's opinion was based on supposition or speculation concerning the materials involved, the condition of the

concrete and the activities that might have caused the contamination, all of which he conceded affected his conclusions. A-757-778. For example, Mr. Connolly had no knowledge of the equipment being used at Alcan's mill in the 1980s, the type of construction underway, or other factors that might affect his opinion. A-760-764. Instead, he relied on facts presented to him by plaintiffs' counsel. *Id.* Mr. Connolly made assumptions about the medium that introduced the PCBs based on his understanding of the operation of the plant which he gained from deposition testimony, testimony at trial and talking with another government expert during the trial, all of which occurred years after he reached his conclusion, which he had testified to in his deposition. A-768-770.

The district court's own expert, Professor Driscoll, described a fundamental element underlying Mr. Connolly's opinion as "highly speculative." in response to a series of questions from the district court itself. A-1070 and A-1076-1079. In *Kumho Tire, supra,* the expert's opinion was found to be unreliable when similarly unsupported opinion testimony was offered.

A proposition that can be tested (or "falsified") should be tested. Mr. Connolly's opinion clearly could have been tested, but never was. When asked if he had ever tested or was aware of studies conducted to determine the solubility rates for PCBs into a concrete-saturated matrix, he conceded that he had not. A-712-713. When asked if he or his firm was engaged in studies to determine the time at which oil began its penetration, he could not recall. A-714. Thus, on the core point of his testimony, the government's expert had no knowledge of anybody who had ever conducted

studies to confirm his hypothesis, nor did he have any recollection of conducting such a study himself. There was no confirmation of the physical and chemical principles which Mr. Connolly claims reflect the behavior of PCBs in a concrete-oil matrix. Indeed, Mr. Connolly admitted that the factual basis for his opinion was incomplete and that he had wanted to collect samples and conduct tests which he claimed that he could not do because discovery had closed. A-757.

The test data developed by every party to this litigation of the emulsion sent to PAS demonstrated the absence of significant, above background level, quantities of PCBs[11]. Although the district court tried to discredit those results or ignore them, the actual test data contradicts Mr. Connolly's untested hypothesis. The scientific method requires that the "highly speculative" hypothesis of Mr. Connolly be rejected.

The parties stipulated that the Fulton site was contaminated by leaks and spills from various tanks, including Tank One and that Alcan's emulsion had been stored in Tank One at the Fulton site.

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[11] As noted above, the Second Circuit found that since PCBs are not naturally occurring substances, there is no "background level." However, EPA itself has issued a policy guidance document on the use of background concentration during the CERCLA remedial investigation process in which background concentrations for CERCLA purposes of man-made ("anthropogenic") substances are set, not at zero as the government contended in the trial and appellate courts, but at the level representing a substance's concentration in the environment as a result of activities not specifically related to the CERLCA release in question. U.S. EPA, Office of Solid Waste and Emergency Response, Office of Emergency and Remedial Response, "Role of Background in the CERCLA Cleanup Program," OSWER 9285.6-07P (April 26, 2002) at 3, 5, 7.

See id. at 236-237. When the government tested the contents of Tank One, the tank contained only sludge in the bottom. *See* Pet. App. 44a. PCBs were not found in the sludge, *id.*, nor were PCBs found in the soil surrounding Tank One. *See* A-197.

The trial court's expert stated that he would expect PCBs to accumulate in the sludge layer at the bottom of the tank. A-1070, 1077. Since PCBs were not found in the sludge, the conclusion follows that PCBs had not been in Alcan's emulsion. The district court simply ignored that testimony:

> While no PCBs were found in the sludge-like material remaining in the bottom of the tank, Alcan's emulsion was not present either. Neither Alcan nor the government suggests that in the face of evidence that Alcan disposed of emulsion and a stipulation that this emulsion was stored in Tank One, the Court should conclude that the absence of the emulsion at the time of testing suggests that the emulsion was never there. Accordingly, the Court will not conclude based on the absence of PCBs in Tank One's sludge that the tank never contained PCBs.

Pet. App. 44a. The district court did not explain why it ignored its own expert's evidence. It is true that the absence of emulsion at the time of testing does not prove the emulsion had never been there; indeed, no one disputed the presence of emulsion. But the real issue was whether PCBs at above background level had been present in the emulsion. The only other evidence on whether PCBs in Alcan's emulsion would concentrate in sludge is consistent with the trial court's expert's opinion. *See* A-515.

The district court's refusal to accept the results of the numerous tests that did not support Connolly's conclusion concerning the existence of PCBs in the emulsion turns the scientific method on its head. Rather than using test data to confirm or falsify a hypothesis, the district court used the hypothesis to reject the data. Using an untested hypothesis to contradict objective data is contrary to the scientific method and is inappropriate under the rules of evidence. *See* Fed. R. Evid. 702 (3).

The Second Circuit, by affirming, has approved the district court's inverted and incorrect approach. The Second Circuit did not explain why it concluded that PCBs were present in Alcan's emulsion at Fulton, nor why it disregarded the court expert's evidence on this question.

District courts and courts of appeal should not have the discretion to disregard test results and scientific models that bear directly on the question of the presence or absence of hazardous substances without sound reasons.

As noted above, to be admissible, the expert opinion must be reliable, and must comport with the scientific method. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993); *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999). To be relevant, it must be shown that the factual bases for the opinion match the factual circumstances of the situation for which the opinion is offered. Fed.R.Evid. 702 (1) and (3). The opinion offered by Mr. Connolly meets neither of these criteria.

As this Court stated in *Daubert*, 509 U.S. at 590, "Proposed testimony must be supported by appropriate validation – *i.e.*, 'good grounds,' based on what is known" and "Scientific methodology today is based on generating hypotheses and testing them to see if they can be falsified...." 509 U.S. at 593 (citation omitted). As noted above, expert opinion must be reliable and must comport with the scientific method. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993); *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999). To be relevant, it must be shown that the factual bases for the opinion match the factual circumstances of the situation for which the opinion is offered. Fed.R.Evid. 702 (1) and (3).

The expert testimony and opinions on which the courts below relied meet neither of these criteria. As this Court held in *General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997), the lower courts in this case should have concluded "that there is simply too great an analytical gap between the data and the opinion offered."

The Court should grant *certiorari* to make it clear to trial courts that the principles and criteria of scientific or technical reliability enunciated in *Daubert*, *Joiner* and *Kumho* also apply in cases tried to the bench, for only insistence on reliable evidence can ensure sound adjudication. "...[I]f the law is to be anything more than a device for haphazardly redistributing wealth, it must ensure that such claims are based on valid science." L. Loevinger, "Science as Evidence, 35 Jurimetrics J. 153, 175-176 (1995)

CONCLUSION

For the reasons set forth above, this Court should grant Alcan Aluminum's petition for a writ of *certiorari*.

Dated: December 9, 2003

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